DOCUMENT RESUME

ED 377 897 JC 950 027

AUTHOR Moore, Andrew
TITLE Computer Assisted Instruction (ILS) for Adults.
PUB DATE Apr 93
NOTE 12p.; Paper presented at the Annual International Conference of the National Institute for Staff and Organizational Development on Teaching Excellence and Conference Administrators (15th, Austin, TX, May 23-29, 1993); for the pilot project report, see JC 950 026.
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Adult Basic Education; Community Colleges; Comparative Analysis; *Computer Assisted Instruction; Computer Networks; *Computer Software Evaluation; Foreign Countries; Integrated Learning Systems; Mathematics Instruction; *Outcomes of Education; *Participant Satisfaction; *Program Effectiveness; Remedial Reading; Student Attitudes; Student Characteristics; Two Year Colleges
IDENTIFIERS *INVEST Computer Assisted Learning System; Nova Scotia

ABSTRACT

In 1991, the Cumberland Campus of Nova Scotia Community College established a literacy research and development project to survey local industries and the community regarding training needs and to develop workplace and community-based programs to meet those needs. One effort involved the implementation of a computer-assisted learning program to help the area's adult learners. The college purchased the INVEST Computer Assisted Learning System, a networked system of basic instructional software offering lessons in reading, writing, mathematics, and life skills and arranged a pilot project to evaluate the system. Specifically, the project sought to determine whether a heterogeneous group of adult learners could make significant gains in academic achievement over an 11-week period, and how such gains would compare to more traditional learning approaches. In the project, student journals were used, one private to encourage writing and a second to converse privately with the teacher. Results of standardized skills tests and evaluation questionnaires indicated the following: (1) positive gains were made in all areas of reading and math, with gains of more than 1.5 years realized for mathematical concepts and problem-solving; (2) 73% of the participants felt the project should have been longer; (3) 80% indicated that they became more highly motivated; (4) 73% felt that they were better and more confident learners; and (5) 80% indicated that they wanted more instructor input. The overall consensus was that there were many positive features to the program which could serve as a successful adjunct to traditional models. (KP)

ED 377 897

# Computer Assisted Instruction (ILS) for Adults

**Andrew Moore**
**Nova Scotia Community College**
**Cumberland Campus**
**Spring Hill, Nova Scotia**

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

A. Moore

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

**Paper presented at the Annual International Conference of the National Institute for Staff and Organizational Development on Teaching Excellence and Conference Administrators.**
**(15th, Austin, TX, May 23-29, 1993)**

JC 950 027



BEST COPY AVAILABLE

# AUSTIN PRESENTATION

Ladies and Gentlemen, Honoured Guests, I am here today to share some information with you about community colleges in Nova Scotia,Canada. In particular I will be concentrating on our campus located in Springhill, Cumberland County, Nova Scotia--home of that famous SNOWBIRD, ANNE MURRAY. The campus serves the community in the education of adults in Cumberland County by providing training in Academic Upgrading, Trades related courses, Business Courses and Applied Arts. The campus also provides customized training, which is designed to meet the needs of business and industry.

In 1991 the campus established a literacy Research and development project. The goals for the Literacy project were:

FIRST: To survey industries and communities with regard to training needs and,

SECOND: To develop and deliver training programs to meet those needs. The overall result of this project led to the development of many workplace program models and many community based program models.

In order to meet the enormous need for community programs as indicated by the Literacy Research and Development Project the community college decided to implement a particular technology in education. At this time, a number of computer assisted learning programs were examined. Research was carried out and from all computer programs examined, the community college decided to purchase the Josten's (Invest) Computer Assisted Learning System.

Purchasing a computer system that can totally serve adult learners can be a difficult task. We found that visually oriented learners prefer written instructions or pictorial representations. Auditory learners prefer oral instructions. Kinaesthetic or motoric learners remember more by writing information. Many computer programs identify with and deliver to the kinaesthetic and visual learner, but few deliver to the auditory learner. The Jostens computer program was selected because it would identify with all of the learning styles including the auditory learners.

In purchasing the system an agreement was made with funding sources that our college campus would field-test the program through a pilot project. The main purpose of the study was to quote:

"to determine the value of a computer-assisted approach towards Academic Upgrading and to determine whether and to what extent this approach would be comparable to more traditional teaching approaches when applied to a diverse group of adults seeking Academic Upgrading. The study was designed to determine whether a heterogeneous group of adult learners could make significant gains in academic achievement over eleven weeks of training on a computer-based learning system, and how such gains would compare to those associated with more traditional learning approaches."(Pilot Project 1992). To conduct an independent assessment, the college engaged Dr. Lex Wilson from Mount Allison University to evaluate the project. Dr. Alexander Wilson has a PHD in Educational Psychology in Special Education. Dr. Wilson co-directs the center for Learning Assistance and Research at Mount Allison University in Sackville, New Brunswick. Dr. Wilson does a significant amount of work training community college teachers and public school teachers to work with adults and youths with learning disabilities. As a preliminary evaluation function, Dr. Wilson developed and administered an Attitudes to Learning Survey as an informal measure of student attitudes towards self, learning and computer-based instruction. Two standardized measures of achievement were administered prior to program initiation and at the end of the 11 weeks. The Canadian Adult Ability Test (Level C)CAAT and The Test Of Adult Basic Education (Level D) TABE. A number of other measures were developed for this project.

A Program Evaluation Questionnaire(PEQ) was developed by the evaluator to allow the participants to evaluate all aspects of the Invest program. Because we were doing an eleven week pilot project, evaluation was centred on using only the reading and math curriculum areas. Very little time was spent evaluating the writing portion of the curriculum. In fact, an online time to be given to math and reading relative to writing and lifeskills would have been of the ratio of 4:1.

Standardized testing revealed that positive gains were made in all areas of reading and math. The extent of the gains in math was greater than those found for the traditional teaching approaches and was particularly evident in the mathematical concepts and problem solving areas. In fact, gains for more than one and one half years were realized in an eleven week period. This finding should be given particular attention. It has often been argued that the computer can offer most to mathematical drill and practice. The present findings suggests that improvement in conceptual understanding does take place, and that it is occurring more than in traditional approaches. This would not have been predicted at the outset. The gains in reading were not statistically significant, but were in a positive direction and paralleled the relative gains noted in one of the two comparison groups.

The younger age (20.30 years) of this comparison group when compared to the Study Group (32.27 years)and the consequent shorter time since leaving full-time attendance in school may have been an influencing factor in the gains found in reading vocabulary and comprehension for this former group.

## Some of the highlights of the pilot project were:

1. The journals kept by the students.

The students were given a disk and asked to keep two files. The first file was confidential and was used to encourage the students to write on a daily basis. The second file was a daily journal where I could read and converse with each student on a daily basis. The daily journal gave students the opportunity to express their concerns ask questions, etc. The journal was an excellent way for me to privately converse with each of the students.

2. Statistics taken from the post evaluation questionnaire reveal:

- "73% of the students felt the Pilot Project should have been longer than 11 weeks."

- "80% felt they were more highly motivated as learners as a result of the program."

- "73% felt they were both better and confident learners"

- "66% of the participants felt the computer program was better than regular classroom learning.

- Comments were: "It was easy to make entrance into the classroom after being absent so many years to these surroundings. "I know how to do math. I can figure things I couldn't before " and "I feel I have accomplished a great amount in mathematics."

- The lab provides stepping stones to the future.

-80 % indicated that there should have been more time with the instructor. Students felt they had learned but wanted the personal input from the instructor to confirm that they were learning.

The overall consensus of the participants in a post evaluation questionnaire, in the group discussions and in the student diaries was that there were many positive features to the Invest Program which, if used appropriately , would lead to a constructive and successful adjunct to the teaching of adults. The desire for a longer program, and for further computer-based programs, and the overwhelming recommendation of the participants to other potential learners supported the continued use of the Invest curriculum in the community college.

Other positive facts noted about the program were:

- Despite the fact that this research project was conducted over the hottest part of the summer, students would arrive as much as one half hour before classes and stay through break time and even shorten their lunch hour in order to get extra time on the computer. All members of the class lived approximately 20 kilometres from the campus and arranged their own transportation to the Pilot Program.
- Meals and daycare were not provided as in other programs on campus during the regular term.
- Attendance remained very high at 93%.
- The mean number of hours on the computer was 151.77 with 59.24 in reading, 59.35 in mathematics, 9.74 in writing and 23.44 in lifeskills and other non-academic on-line work. Approximately 80% of the time divided evenly between the two areas.

My previous experience involved teaching in the public school system with various grade level assignments. Much of my time teaching in the public school system was spent in developing lessons for students that would teach particular concepts as well as motivate groups of students in the learning process. I noticed immediately in the pilot project that I did not have to spend time motivating students to learn as I did in the public schools.

Infact, through the computer network students were retrieving lessons and working in twelve different areas and were extremely self-motivated to learn the lessons. The computer lessons kept the students motivated and in exchange this gave me the opportunity to provide more one to one attention to my students.

Since the completion of the Invest Pilot Project some students have moved on to other traditional programs. A few remain in the community college Academic Upgrading program. Transition to other programs has not been a problem as Invest is used as a resource in our academic programs. Currently, we are using the computer program in conjunction with the traditional teaching style.

Presently the computer lab is also being utilized by industry through the delivery of an evening G.E.D. preparation course two evenings per week. Industry feels this provides a very conducive learning environment.

## IN CONCLUSION

The results of the Pilot Project using Invest, submitted to the Department of Education, sparked, not only the interest of the Minister of Education, but also the interest of other agencies. Department of Education Nova Scotia has just called for tender for 90 computer labs to be placed in the high schools in the province.

School board officials and community college personnel are eagerly waiting to see if Jostens Learning Corporation will be the software company selected in the tender.

Some final observations are:

- That the Invest Computer Assisted learning program offers some major advantages to classroom instruction.

- The program allows the instructor to pinpoint areas of relative weakness, and to assign lessons specifically to overcome that weakness.

- If used appropriately, the system should allow the instructor to devote his/her time and attention to matters of instruction for which the teacher is most effective--modelling, explaining, developing higher level thinking skills, and , of course, teaching one-to-one or to small groups. The system has the potential to make the instructor more effective and efficient.

A NOTE OF CAUTION is that the instructor should be in the computer lab to teach first and to manage the system last. The instructor must receive intensive training as a prerequisite to program implementation in order to ensure that he or she can engage in meaningful teaching and not simply manage the system.

The support of the agencies involved in the Research Project must be noted:

- Canada Employment Commission, the funding agency for the pilot project.

- The Nova Scotia Community College, Cumberland Campus (Mr.George Laird, Principal, and Ms. Marg Norton, Vice Principal, to have the incite to research and purchase a Computer Assisted Learning program like Invest and to have the dedication to ensure that the program be evaluated closely and continuously.)

- Dr. Alexander Wilson, Mount Allison University and his dedication to provide an external means of evaluating our program as well as the expertise needed in such an endeavour.

**Thank you ladies and gentlemen and I invite any questions you may have concerning our project.**